

# Forces



## Curriculum Links:

- Compare how things move on different surfaces
- Notice that some forces need contact between two objects, but magnetic forces can act at a distance
- Observe how magnets attract or repel each other and attract some materials and not others
- Compare and group together a variety of everyday materials on the basis of whether they are attracted to a magnet, and identify some magnetic materials
- Describe magnets as having two poles
- Predict whether two magnets will attract or repel each other, depending on which poles are facing

## Key Facts:

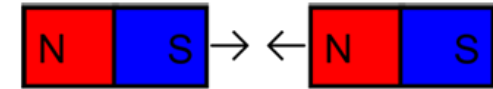
- Forces are pushes and pulls—these can change the motion of an object. They can speed it up, slow it down or stop it
- When an object moves across a surface, friction acts as an opposite force. Friction holds back the motion of an object. Some surfaces create more friction than others - this means objects can move across them slower
- Magnets create a force around them called a magnetic field. When objects enter this, they are attracted to or repelled from the magnet
- Objects that are magnetic are attracted to magnets. Iron and steel are magnetic, whereas aluminium and copper are non-magnetic
- Magnets have two ends: the north and south pole. Opposite poles attract each other; like poles repel

## Possible experiences:

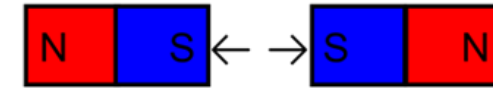
- Investigate the amount of friction on different surfaces
- Investigate how magnets can be used
- Investigate magnetic and non-magnetic materials
- Find out if the size of a magnet affects strength—try using paper clip chains

## We should already know:

- The shape of some materials can be changed by bending, twisting, stretching
- Know that a force is a push and pull
- When a force is applied, an object either moves or stops
- The strength of a force determines the speed



Opposite poles **attract**



Same poles **repel**

## Key Vocabulary

Attract	When an object attracts another, it causes it to move towards it
Friction	The resistance a surface encounters when moving over another
Force	The push or pull on an object
Gravity	The force which attracts something to the centre of the Earth
Magnet	A piece of iron or other material which attracts magnetic materials towards it
Magnetic Field	An area around a magnetic material in which the force of the magnet is felt
Non-magnetic	An object that is not magnetic
Repel	Gives a force which pushes away
Resistance	A force which slows down a moving object